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ABSTRACT

Individualized instruction including continuous progress education and team teaching requires a complexity of organizational structure dissimilar to that of traditional schools. In such systems, teachers must maintain extensive and complex student record systems. This teachers' manual provides an example of a computerized record system developed to complement the Individually Guided Education (IGE) program with its varying instructional approaches and innovative practices. Functions discussed include grading, achievement profiling, instructional grouping, diagnostic reporting, and student data base maintenance. Appended are sample forms, a glossary of terms, and a bibliography of other Wisconsin System for Instructional Management documents. (STS)

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Practical Paper No. 18

WISCONSIN SYSTEM FOR INSTRUCTIONAL MANAGEMENT: TEACHERS' MANUAL FOR THE UNIFIED SYSTEM

by

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

Report from the Project on
Studies of Administration and Organization for Instruction

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November 1977

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- conducting and synthesizing research to clarify effective approaches to teaching students basic skills and concepts
- developing and demonstrating improved instructional strategies, processes, and materials for students, teachers, and school administrators
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WISCONSIN RESEARCH AND DEVELOPMENT
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ABSTRACT

The purpose of this manual is to promote and facilitate effective and efficient use of the Unified Wisconsin System for Instructional Management (WIS-SIM) by teachers and other instructional personnel. It assumes no knowledge of data processing or computer technology. It is not a technical document and few technical terms are used.

If additional system operating specifications are desired, the reader is referred to the SYSTEM DESIGN MANUAL FOR THE UNIFIED WIS-SIM (1977) or the WIS-SIM TERMINAL OPERATOR GUIDE (1977). Additional sources also are provided in the reference section of this manual.

I

INTRODUCTION

One of the primary efforts of the Wisconsin Research and Development Center for Cognitive Learning has been the development of a complex innovation known as Individually Guided Education (IGE). The complexity of the organizational structure of IGE is quite different from other types of individualized schooling. In IGE, varying instructional approaches and innovative practices are used to meet the student's needs and abilities. They include continuous progress (non-graded) education, team teaching, a system for instructional decision making (the Instructional Programming Model), and differentiated staffing and decision making at the building level.

As a result of this approach to individualization, teachers must maintain record-keeping systems that may be more extensive and complex than those in other individualized programs. The teachers also are called upon to make decisions about instruction and classroom management at more frequent intervals.

Given this approach, a management information system to assist teachers with the requisite management functions, record keeping, and clerical tasks seems appropriate. A computer managed instruction system, therefore, is a management information system designed to help educators manage the complexities of the IGE instructional process more effectively and efficiently.

II

OVERVIEW OF WIS-SIM

The Wisconsin System for Instructional Management (WIS-SIM) is a computer managed instruction system developed at the Wisconsin Research and Development Center for Cognitive Learning. WIS-SIM requires interaction between human and physical resources to support management decisions within an organizational structure such as the IGE school. The main goal of WIS-SIM is to improve instructional decision making in order to maximize the educational progress of each child while making efficient use of the available human, material, and financial resources.

Often the terms computer managed instruction (CMI) and computer assisted instruction (CAI) are confused or not properly distinguished. CAI is a curricular program wherein an interface exists between the student and computer for the purpose of instruction. Typically in CAI systems, the student communicates with the computer via a television-type display or teletype terminal. Instructional material is presented to the student, student responses are accepted, feedback is provided, and records are maintained. These functions, including sequencing of materials to some extent, are controlled by the computer.

Computer managed instruction (CMI) systems have as their objective the collecting and processing of student information. WIS-SIM can achieve these objectives by providing information in the following areas:

1. Assessing Instructional Outcomes/Updating Student Records

   Allows for the submission of assessment information and updating of the student data base files which contain individual student performance and demographic data.

2. Identifying Instructional Needs

   Teachers can receive lists of their students with a computer stored record of their progress. These listings can be provided for units of for individual students. The format of the individual reports also allows them to be used in reporting to parents. Both the unit and individual reports can be tailored to report progress for a teacher-specified range of objectives within an instructional program.

3. Grouping Students for Instruction

Instructional groups can be formed on the basis of the instructional needs previously identified. This is accomplished by searching a particular group of student records (usually a unit or class) and indicating whether students are eligible for a particular instructional module, listing those who are or who are not, as well as a summary report listing student eligibility totals over a range of modules.

The question of how this information is to be provided still The functional capabilities of WIS-SIM are concerned with supplying the requisite information regarding grouping, assessment and identifying student needs.

The interactive nature of WIS-SIM allows for all reports to be submitted via the school computer terminal. The terminal, a teletype device, permits communication with the central computing facility at another site using normal telephone service. In this mode, the operator has the option of remaining on-line to receive a report directly at the terminal or the system may be directed to print the report at another site on a deferred basis for reasons of economy or speed of printing.

In summary, WIS-SIM provides school personnel with information that identifies and assesses students' needs to facilitate instructional decision making and classroom management.

III

WIS-SIM CURRICULAR SUPPORT

The curricular support design of WIS-SIM includes certain explicit assumptions about the organizational nature and structure of the curriculum. These should include:

1. Sets of instructional modules (e.g., WDRSD-Level, DMP-Topic) that are an aggregation of instructional objectives organized around content, process, activity, or media.

2. Specified sets of measurable instructional objectives.

3. Established levels of mastery for each specified objective.

4. Criterion referenced tests or observation schedules, both pretests and posttests, to assess achievement of specified objectives.

5. Stated networks of sequenced objectives.

The following are descriptions of two curricular programs, the Wisconsin Design for Reading Skill Development and Developing Mathematical Processes, which may be supported by CMI. These descriptions are included to illustrate curricula above criteria.

The Wisconsin Design for Reading Skill Development (WDRSD) provides a structure for teaching the essential reading skills. The program is divided into six areas: Word Attack, Study Skills, Comprehension, Self-Directed Reading, Interpretive Reading, and Creative Reading. The first three areas contain explicitly stated objectives and mastery learning. The last three areas include expressive objectives and activities for participation rather than skill mastery. Each area of the Design is divided into levels and skills. The skills within a level are not necessarily sequential, but certain skills are prerequisite to skills in other levels.

The Design contains criterion referenced assessment instruments, methods for managing instruction, means to monitor student progress, and teacher resource files suggesting instructional activities and commercial materials to reinforce the teaching of skills. Some areas of the program are adaptable to computer managed instruction. They include those areas with measurable instructional objectives, levels of mastery for the objectives, criterion referenced tests to assess attainment of objectives, and some sequential patterns and prerequisite skills.

Developing Mathematical Processes (DMP) is an elementary mathematics program developed by the Wisconsin Research and Development Center for Cognitive Learning. DMP consists of 90 topics built around a set of hierarchically related objectives. The instruction of the 90 topics does not have to be approached in a linear sequence (e.g., topic 2 may be followed by topics 3, 4, or 6). The teacher has the option of taking many different routes through the DMP topics. This provides increased flexibility in instructional groupings regardless of the organizational nature of the school.

The topics in DMP correspond approximately to the grade levels indicated below:

TOPICS	APPROXIMATE GRADE LEVEL
1-40	K-2
41-65	3-4
66-90	5-6

Under each topic are from two to eight objectives, including regular objectives and preparatory objectives. Regular objectives indicate goals associated with the given topic while preparatory objectives relate to introduction of later topics. For example, Topic 20 concerning paths is presented below:

> **The children describe a closed path (such as a triangle, rectangle, and square) in terms of number and length of sides. They are introduced to the use of the geoboard as a simple way to make paths.**
>
> **REGULAR OBJECTIVES**
>
> **1. Given a path, describes it.**
> **2. Given a description of a path, chooses a path with that description.**
> **3. Given a description of a path, constructs such a path.**
>
> **PREPARATORY OBJECTIVE**
>
> **4. Given two regions, compares and orders them on the attribute of area.**

WIS-SIM enhances the utilization of DMP by providing the instructional staff with several information components in addition to maintaining records of student achievement in the program. For example, through the capability of automatic analysis of the prerequisite structure of DMP (determination of which topics are required before studying another topic), the forming of instructional

groups is accomplished with greater efficiency. Profiling students allows efficient examination of performance data related to the DMP topics leading to more effective planning.

In summary, WDRSD and DMP are representative of curricula that are capable of being supported by WIS-SIM. They fulfill certain basic criteria including an objective-based, hierarchical structure with a presented instructional sequence.

IV

WIS-SIM STUDENT GRADING/ACHIEVEMENT TERMINOLOGY

Prior to the description of the types of curricula supported by WIS-SIM, it is necessary to present the terms utilized in the grading of student performance. The listing below relates the grading symbols to student achievement. These specifications may be redefined by the school according to local curricula and requirements.

M = Mastery (represents 80-100 percent achievement on posttest)

MP = Mastery on pretest

P = Progressing (50-79 percent achievement on posttest)

PP = Pretest score (50-79 percent achievement on pretest)

N = Needs reteaching (below 50 percent achievement on posttest)

NP = Non-mastery on pretest

MC = Mastery based on teacher certification (through observation the teacher certifies that the student can perform at a level commensurate with mastery level).

NC = Objective or skill has not been covered (this signifies that the objective or skill is not included in his/her program to date).

M1 = Mastery of a math objective that is also an objective in the science curriculum.

M2 = Mastery of a science objective that is also an objective in the math curriculum.

M* = Mastery by summary.

MA = Mastery applier.

V

FUNCTIONS AND REPORTS

Functions enabling the terminal operator to update student data base files and to obtain reports fall into five major areas:

(1) Grading

(2) Achievement profiling

(3) Instructional grouping

(4) Student data base maintenance

(5) Diagnostic reporting

In order to use WIS-SIM more effectively and efficiently, a discussion of these functions and their corresponding reports is appropriate. Therefore, the functions and reports composing each of the five areas are presented and discussed in the following subsections.

OVERVIEW

The grading aspect of WIS-SIM involves two distinct yet complementary functions. Inputting achievement information or performance data for each student constitutes the first, while the updating of this data is the remaining function in this category. Updating performance data may entail either correction or deletion of information previously entered.

Achievement profiling summarizes the progress of individual students. This type of information may encompass all the instructional skills or objectives comprising a curriculum or it may illustrate performance levels for a group of students. Reports of this nature may be utilized in a manner similar to that of grade reports. That is, they may serve as feedback to parents and students as well as being of value in parent-teacher conferences.

While the previously discussed areas of WIS-SIM deal primarily with individual students, it is the instructional grouping function that underlies individualization of the educational program. The grouping function uses information contained in the diagnostic and performance profile reports in developing instructional grouping recommendations that should result in optimum learning situations.

Student data base maintenance deals with the accuracy of the data base. When students leave the district or move within the school to other instructional groups or homerooms, this information must be entered if the data base is to reflect the current position of students in the school.

The role of the diagnostic reporting functions within WIS-SIM is to compare achievement information with established performance expectations. One type of diagnosis is to identify those skills or objectives that the student has mastered and those not mastered.

Through specifying performance expectations, standards for individual students, units, and the entire school may result. These expectations serve as input to the diagnostic process. Thus, diagnosis is the process of comparing the individual's performance record to the expectations and standards established for that student. Reports may be generated to present the results of these comparisons. Of possibly greater importance are reports that indicate those students whose achievement levels are significantly different in relation to the previously established standards. These exception reports list students who may require additional consideration when developing instructional programs commensurate with their needs and abilities. The diagnostic reports of WIS-SIM also may be used to identify students who are performing at a high rate and are approaching advanced skill levels.

GRADING

Grading Update Report

The Grading Update Report (GRD) function allows student achievement data to be entered in the school data base by instructional groups, by the topic or skill, or by individual student. When entering achievement data, one must include the skill and the score achieved on that skill.

After the entering of data, a Grading Update Report is generated. This report permits the teacher to examine student progress in specific skills and to check to determine its accuracy. If errors are discovered, the erroneous information may be deleted or updated through the Correct Grades (CGD) function.

The Grading Update Report includes the skills requested, the score received on the most recent assessment, the date of the latest attempt, the number of times the posttest for each skill has been administered, and the status of the student relative to each skill. The status column includes a number of identifiers and explains to the reader where the student stands in every requested skill. These identifiers are explained in the sample Grading Update Report (see Figure 1). It should be mentioned that all the identifiers except "blank" denote an error concerning the score/grade entered for an objective or skill.

Careful examination of the Grading Update Report in Figure 1 and the GRD function should reduce the amount of erroneous information entered into a student's file. These reports also enable the teacher to be better informed as to the student's progress.

DEVELOPING MATHEMATICAL PROCESSES

GRADING UPDATE REPORT — PAGE 1
UNIT B DENNIS W. SPUCK ELEMENTARY SCHOOL — AS OF 10/29/77

CHECK STATUS FOR ERRORS:

ID #	NAME	OBJECTIVE	LAST SCORE	DATE	# OF ATTEMPTS	STATUS
1570	STACK LEONARD	01-1	M	10/29/77	0	INITIALIZED
		01-2	MP	10/29/77	0	INITIALIZED
		01-3	MC	10/29/77	0	INITIALIZED
		02-1	M	10/29/77	0	INITIALIZED
		02-2	M	10/29/77	0	INITIALIZED
		03-1	NP	10/29/77	0	INITIALIZED
		04-1	P	10/29/77	0	INITIALIZED
		05-1	PP	10/29/77	0	INITIALIZED
		05-2	PP	10/29/77	0	INITIALIZED
730	BECK ALAN	01-1	M	10/29/77	0	INITIALIZED
		01-2	M	10/29/77	0	INITIALIZED
		01-3	MC	10/29/77	0	INITIALIZED
		02-1	M	10/29/77	0	INITIALIZED
		02-2	M	10/29/77	0	INITIALIZED
		03-1	MC	10/29/77	0	INITIALIZED
		04-1	P	10/29/77	0	INITIALIZED
		05-1	NC	10/29/77	0	INITIALIZED
		05-2	NC	10/29/77	0	INITIALIZED

STATUS column may contain any of the following :*

blank - objective score updated with no overlap regarding previous grading
NOT ENTERED - student not yet entered into this program/area
INITIALIZED - module/objective is initialized
PURGED - module/objective has been purged
INVALID DATE - date is earlier than previous date
INVALID SCORE - external score is invalid
INVALID ELEM - invalid element identifier
(OVERLAP) - overlap mastery stored for this update

*For a more detailed explanation of STATUS, see page of the SYSTEM DESIGN MANUAL FOR THE UNIFIED WIS-SIM.

Figure 1. Sample Grading Update Report

Correction Update Report

The Correction Update Report (CGD) function allows the deletion or correction of either a student achievement score or the date of grading for an achievement score. In determining whether a score is correct, the Multiple Performance Profile (MPP) report, Individual Performance Profile (IPP) report, and the Grading Update Report shoul first be reviewed. If a score is found to be in error, the score for the specific skill may be deleted or updated through use of the CGD function. It should be noted that this function deals only with the records of individual students.

The Correction Update Report is in the same format as the Grading Update Report (Figure 1). It permits teacher examination of student performance data and a check for possible errors. Through the use of such a report, errors may be reduced.

ACHIEVEMENT PROFILING

Individual Performance Profile

The Individual Performance Profile (IPP) function provides information on individual students concerning their skill-by-skill progress in the subjects supported by WIS-SIM. In generating the IPP report, performance levels of any student are readily available to teachers, parents, and students. Also included in this report are the skills or objectives composing each requested level, the number of times the posttest for each skill has been administered, the score received on the most recent posttest, and the date of the latest attempt (see Figure 2).

The IPP report is useful in teacher planning, parent-teacher conferences, and student feedback. Objectives for specific activities are cogently presented in hierarchical fashion. This simplifies matters for the teacher in terms of ascertaining each student's progress and position in relation to attaining individual objectives and meeting curriculum requirements. Not only are objectives or skill levels stated but the rate at which students are progressing is presented. Information of this nature contributes to the formulation of reasonable teacher expectations concerning the learning needs and capabilities of the student. Teachers may subsequently identify areas of difficulty in cases where an objective has not been mastered. By utilizing the posttest data and the known capabilities of the student, diagnosis of the problem and taking prescriptive measures to alleviate it are facilitated.

In many instances, report cards have been criticized by parents as being difficult to interpret. Through the use of the IPP report, this criticism may be alleviated. The report lists specific objectives for each general area of study in order of difficulty.

In preparing for conferences, the teacher may wish to be more specific regarding a student's progress than provided for in the IPP. For each objective outlined in the IPP, the learning activities employed in teaching the objective may be presented. In this way, parents are not only informed of their child's performance levels, but also of the means employed to achieve the desired result.

In schools engaging in individualized instruction, record-keeping is a time-consuming task for teachers. The IPP report displays student progress in an organized manner. Records are readily accessible and up-to-date. Without this reporting system, teachers are forced to maintain records of student progress on paper or through the use of charts. In order to update these charts, papers and tests must be filed and referenced. The IPP report minimizes the need for such a detailed filing system. Consequently, fewer errors and increased organization may be realized. Duplicate copies for student use and parental information are easily obtained. This may result in a more continuous feedback pattern concerning the parents' and student's perception of his or her performance levels.

DEVELOPING MATHEMATICAL PROCESSES

INDIVIDUAL PERFORMANCE PROFILE — PAGE 1
UNIT B DENNIS W. SPUCK ELEMENTARY SCHOOL — AS OF 10/29/77

STUDENT NAME : BECK ALAN
ID NUMBER : 730
REQUESTED TOPICS : 01,02,03,04,05,06,07,08,09,10

	OBJECTIVE	LAST SCORE	LAST ATTEMPT	ATTEMPTS
TOPIC 01 : DESCRIBING AND CLASSIFYING				
1	CHOOSES OBJECT	M*	08/02/77	1
2	STATES SAME OR DIFFERENT	M*	08/02/77	1
3	DESCRIBES OBJECT	M*	08/02/77	1
TOPIC 02 : COMPARING AND ORDERING ON LENGTH				
1	COMPARES TWO LENGTHS	M*	08/02/77	1
2	ORDERS TWO LENGTHS	M*	08/02/77	1
TOPIC 03 : EQUALIZING ON LENGTH				
1	EQUALIZES TWO LENGTHS	M*	08/02/77	1
TOPIC 04 : ORDERING SEVERAL OBJECTS ON LENGTH				
1	ORDERS SEVERAL LENGTHS	M*	08/02/77	1
TOPIC 05 : REPRESENTING LENGTH				
1	REPRESENTS LENGTH PHYSICALLY	M*	08/02/77	1
2	PHYSICALLY COMPARES/ORDERS LENGTHS	M*	08/02/77	1
TOPIC 06 : MOVEMENT AND DIRECTION				
1	REPRESENTS MOVEMENT PHYSICALLY	M*	08/02/77	1
2	REPRESENTS MOVEMENT PICTORIALLY	M*	08/02/77	1
TOPIC 07 : NUMEROUSNESS: COMPARE,ORDER,EQUALIZE				
1	COMPARES TWO SETS	M*	08/02/77	1
2	ORDERS TWO SETS	M*	08/02/77	1
3	EQUALIZES TWO SETS	M*	08/02/77	1
4	ORDERS SEVERAL SETS	M*	08/02/77	1
TOPIC 08 : THREE-DIMENSIONAL SHAPE				
1	CHOOSES 3-D OBJECT	M*	08/02/77	1
TOPIC 09 : REPRESENTING NUMEROUSNESS PHYSICALLY				
1	REPRESENTS NUMEROUSNESS PHYSICALLY	M*	08/02/77	1
2	PHYSICALLY COMPARES AND ORDERS SETS	M*	08/02/77	1
TOPIC 10 : PATHS AND LOCATION				
1	DESCRIBES LOCATION	M*	08/02/77	1
2	PLACES OBJECT	M*	08/02/77	1

Figure 2. Individual Performance Profile Report

ACHIEVEMENT PROFILING

Multiple Performance Profile

The Multiple Performance Profile (MPP) function generates the MPP report (see Figure 3). This report illustrates achievement information relating to the skill-by-skill progress for an instructional group of students. The MPP may be requested for a unit, homeroom, or specific group.

Components of the MPP include the specific area and level of the program requested, a listing of the skills or topics composing each level, and the individual progress of each student concerning the skills. A description of skills is not included in the report. Rather, they are listed according to numerical ranking (e.g., 1, 2, 3, 4).

The MPP report is useful in determining the achievement status of pupils in a given instructional group. Furthermore, it should be a valuable mechanism in ascertaining the most productive instructional grouping procedures. Providing progress reports of a number of students enables the teacher to view a particular student's performance in isolation or in concert with other's achievement levels. In this way, reasonable group goals as well as individual goals may be established.

In the event that an administrator or parent inquires as to a particular teacher's methodology concerning grouping, the MPP may be useful. The teacher may refer to previous reports in order to explain and clarify the reasons behind a particular grouping. Succinctly, the MPP serves as an accountability device for the teacher.

DEVELOPING MATHEMATICAL PROCESSES

MULTIPLE PERFORMANCE PROFILE - HOMEROOM PAGE 1
HOMEROOM A1 DENNIS W. SPUCK ELEMENTARY SCHOOL AS OF 10/29/77

TEACHER : NICHOLS
NUMBER OF STUDENTS IN THIS HOMEROOM = 23
REQUESTED TOPICS : 01,02,03

ID #	NAME	TOPIC:	01			02		03
		OBJECTIVE:	1	2	3	1	2	1
2620	ADAMS,ALFRED							
240	BOZEMAN,PATRICK							
300	CARLSON MARGARET		M------M			M---M		M
900	CHRISTENSEN DOROTHY		M------M			M---M		M*
500	COLLINS MARGARET		M------M			M---M		M*
1700	DENNISON DEBORAH		M------M			M---M		M*
2300	DOUGHERTY RONALD		M------M			M---M		M*
3290	FRITZ,FRED							
2100	GUNDERSON BONNIE		M------M			M---M		M*
1500	HYLAND CHRISTOPHER		M------M			M---M		M*
1100	LAWRENCE MARILYN		M------M			M---M		M*
3100	MAY ROBERT		M------M			M---M		M*
1300	MCDONALD RUSSELL		M------M			M---M		M*
3300	QUINN EMIL		M------M			M---M		M*
2900	RAY STEVE		M------M			M---M		M*
1900	RICHARDSON KIMBERLY		M------M			M---M		M*
100	RICHARDSON LARRY		M------M			M---M		M*
700	SCHMELZER LEONARD		M------M			M---M		M*
2700	SCHMITZ PATRICIA		M------M			M---M		M*
3500	SHEIL MARK		M------M			M---M		M*
3900	STACK EMIL		M------M			M---M		M*
390	SUE RICHARDS							
2500	TOMLINSON WILLIAM		M------M			M---M		M*
			0	0	0	0	0	0
	NUMBER OF STUDENTS NOT		0	0	0	0	0	0
	MASTERING OBJECTIVE		4	4	4	4	4	4

Figure 3. Multiple Performance Profile Report

ACHIEVEMENT PROFILING

Individual Achievement Profile

The Individual Achievement Profile (IAP) function is unique in that the report is comprised of two parts: the first is computer-generated, the second is a document made available for teacher, parent, and student comments. Instead of focusing on a particular level of a curriculum and its concomitant skills, the IAP is concerned with an interval of time. Over a given time span, how many skills have been mastered? In other words, the IAP zeroes in on the rate of achievement by students. Elements of the first part of the report (the computer-generated portion) include the period of time in question, objectives within each curriculum being studied over the stated time period, the number of times the posttest for each skill has been administered, the score received on the most recent posttest, and the date of the latest attempt at mastery for the skill in question (see Figure 4). Additionally, the IAP report informs the teacher as to how many objectives the student has been tested on during the span of time. This report focuses on homerooms. An IAP report is generated for each student in the specified homeroom.

The second portion of the report is devoted to a subjective evaluation of the student's progress. Students, parents, and teachers have an opportunity to express their opinions regarding the student's progress, rating it as above, below, or meeting expectations. This aspect of the report encourages communication between parents and teachers.

The IAP report informs the teacher and parent, as well as the student, of the rate of achievement. Comparison between past and present performance over similar time spans is enhanced. Thus, the analysis of achievement patterns and insights to future achievement levels may be facilitated.

DEVELOPING MATHEMATICAL PROCESSES

INDIVIDUAL ACHIEVEMENT PROFILE — PAGE 1
UNIT A DENNIS W. SPUCK ELEMENTARY SCHOOL — AS OF 10/29/77

STUDENT NAME : COLLINS MARGARET
ID NUMBER : 500
REPORTING PERIOD : 08/01/77 - 10/29/77

	OBJECTIVE	LAST SCORE	LAST ATTEMPT	ATTEMPTS
TOPIC 04 : ORDERING SEVERAL OBJECTS ON LENGTH				
1	ORDERS SEVERAL LENGTHS	M	08/23/77	1
TOPIC 11 : REPRESENTING NUMEROUSNESS PICTORALLY				
1	REPRESENTS NUMEROUSNESS PICTORIALLY	P	08/03/77	1
2	PICTORIALLY COMPARES AND ORDERS SETS	N	08/03/77	1
TOPIC 14 : REPRESENTS NUMEROUSNESS SYMBOLICALLY				
1	STATES NUMBER FOR SET	M2	08/03/77	0
TOPIC 24 : THE NUMBERS 0-20				
1	STATES NUMBER FOR SET 11-20	M2	08/03/77	0

CURRENTLY STUDYING TOPIC 03 : EQUALIZING ON LENGTH

OBJECTIVES MASTERED THIS PERIOD -- 3

OBJECTIVES TESTED THIS PERIOD -- 5

Figure 4. Individual Achievement Profile Report - Part I

.....1.....2.....3.....4.....5.....6.....7..

PROGRESS (INDICATE ONE) : ABOVE / MEETS / BELOW EXPECTATION

STUDENT SIGNATURE : _____

COMMENTS : _____

_____

_____

PARENT SIGNATURE : _____

COMMENTS : _____

_____

_____

TEACHER SIGNATURE : _____

COMMENTS : _____

_____

_____

_____

.....1.....2.....3.....4.....5.....6.....7..

(This last portion of the report is always the same so it could be mimeographed and then attached to the first portion instead of being computer generated.)

Figure 5. Individual Achievement Profile Report - Part II

INSTRUCTIONAL GROUPING

Instructional Grouping Recommendations (Summary, Group, Omission)

For each Instructional Grouping Recommendation (IGR) requested, three complementary reports may be generated. These reports are generated for units. The Instructional Grouping Recommendation-Summary (IGR-Summary) report lists all students within the specified unit who are recommended for one or more skills and indicates the skills for which they are eligible (see Figure 6). For example, the teacher may desire information on topics 1, 2, and 3 in the DMP curriculum. The IGR-Summary report lists all the students in the unit and would indicate student performance data on each of three topics. The data for each student consist of the number of objectives in each topic that he or she has not mastered. Following the number under each topic is the letter "X" signifying that the student is ready for instruction in that topic. If the teacher asks for multiple listings of individuals, he or she will receive student progress data for each of the topics requested providing the individual has met the prerequisite for that topic. Conversely, if multiple listings are not desired, an individual's name will appear on the first topic for which he or she has met the prerequisite entry level but for which he or she has objectives left to master. The IGR-Summary report is always generated when utilizing the IGR function. The Instructional Grouping Recommendation-Group (IGR-Group) report is utilized when a more specific breakdown of student progress is necessary. This report is optional. If the teacher requests individual listings, the IGR-Group report is generated. This report is produced for each topic or level requested. In our example, three such reports have been generated (see Figures 7, 8, and 9). For the IGR-Group report concerning topic 11, the objectives comprising that topic are listed (no description) and the progress of each student in the unit on each objective is presented. Additional information includes the date of the individual's latest attempt (this refers to the first objective in topic 12 not mastered) and the number of attempts at mastery on the objective in question. This report, as previously mentioned, is produced for topics 12 and 14 with the same format being followed.. Of importance in reference to the IGR-Group report is that students who have mastered all the objectives for the relevant topic, be it 11, 12, or 14, requested are not included on that particular IGR-Group report. However, acknowledgement of the mastery is illustrated on the IGR-Summary report. The final component of the IGR reports is the Instructional Grouping Recommendation-Omission (IGR-Omission) report (see Figure 10). The IGR-Omission report is always generated when employing the IGR function. It indicates students who have not been mentioned on the IGR-Summary report. That is, if there are students who are not eligible for any of the topics specified, they would be included on the IGR-Omission report. This report lists a maximum of six skills for which these youngsters are eligible.

If many students appear on the Omission report, more than can be easily incorporated into other groups or work independently, a new grouping request may be necessary. New skills may be chosen from:

1. The recommended skills appearing beside each child's name on the Omission report.

2. A survey of a current Multiple Performance Profile.

3. Individual Performance Profiles for the students who have been omitted.

Summarily, the reports composing the Instructional Grouping Recommendations provide additional information to the teacher and aid in maximizing efficiency and effectiveness in developing instructional groups. These reports also demonstrate an organized rationale for supporting grouping decisions. Teachers no doubt place importance on their knowledge of an individual student's psychological make-up. These reports assist the teacher in combining both their personal knowledge of the student and concrete performance data to arrive at a more meaningful and effective learning situation for students.

DEVELOPING MATHEMATICAL PROCESSES

INSTRUCTIONAL GROUPING RECOMMENDATION - SUMMARY — PAGE 1
UNIT A DENNIS W. SPUCK ELEMENTARY SCHOOL — AS OF 10/29/77

SUMMARY FOR THE FOLLOWING TOPICS :

TOPIC 10 : PATHS AND LOCATION
TOPIC 11 : REPRESENTING NUMEROUSNESS PICTORALLY
TOPIC 12 : TALLYING
TOPIC 13 : TIME
TOPIC 14 : REPRESENTS NUMEROUSNESS SYMBOLICALLY
TOPIC 15 : TWO-DIMENSIONAL SHAPE

THE NUMBER PRECEDING 'X' INDICATES NUMBER OF OBJECTIVES NOT YET MASTERED IN THE RECOMMENDED TOPIC

SEQ	AC	ID #	NAME	10	11	12	13	14	15		
1	A	2620	ADAMS,ALFRED							I	0
2		2600	ANDERSON BARBARA				1X	3X		I	2
3		240	BOZEMAN,PATRICK							I	0
4		300	CARLSON MARGARET				1X	4X		I	2
5	A	3000	CERNS ALAN			1X	1X			I	2
6		900	CHRISTENSEN DOROTHY			1X	1X			I	2
7		500	COLLINS MARGARET		2X		1X			I	2
8		1700	DENNISON DEBORAH		2X		1X			I	2
9	A	173	DOE,JOHN							I	0
10		2200	DOUGHERTY ELAINE				1X	4X		I	2
11		2300	DOUGHERTY RONALD			1X	1X			I	2
12		200	DOUGHERTY SIDNEY		1X		1X			I	2
13	AB	3290	FRITZ,FRED							I	0
14		2100	GUNDERSON BONNIE			1X	1X			I	2
15		2000	HENDERSON MICHAEL				1X	3X		I	2
16		1500	HYLAND CHRISTOPHER				1X	4X		I	2
17		600	LAWRENCE CHARLES		2X		1X			I	2
18		1100	LAWRENCE MARILYN			1X	1X			I	2
19		1400	LAWRENCE RUSSELL		2X		1X			I	2
20		4000	MAY HARRY		1X		1X			I	2
21		3100	MAY ROBERT		2X		1X			I	2
22		1300	MCDONALD RUSSELL			1X	1X			I	2
23	A	3960	MCISAAC,TARA							I	0
24		3300	QUINN EMIL		2X		1X			I	2
25		3400	RAY MARY			1X	1X			I	2
26		2900	RAY STEVE				1X	3X		I	2
27		800	RICHARDSON DEBORAH			1X	1X			I	2
28		1900	RICHARDSON KIMBERLY			1X	1X			I	2
29		100	RICHARDSON LARRY				1X	3X		I	2
30	A	1600	RICHARDSON MARTHA			1X	1X			I	2
31		700	SCHMELZER LEONARD		2X		1X			I	2

Figure 6. Instructional Grouping Recommendation-Summary Report

DEVELOPING MATHEMATICAL PROCESSES

INSTRUCTIONAL GROUPING RECOMMENDATION - SUMMARY PAGE 2
UNIT A DENNIS W. SPUCK ELEMENTARY SCHOOL AS OF 10/29/77

THE NUMBER PRECEDING 'X' INDICATES NUMBER OF OBJECTIVES NOT YET MASTERED IN THE RECOMMENDED TOPIC

SEQ	AC	ID #	NAME	10	11	12	13	14	15		
										I	
32	A	1200	SCHMELZER SHERYL		1X		1X			I	2
33		2700	SCHMITZ PATRICIA		2X		1X			I	2
34		400	SCHULTZ MARGARET		1X		1X			I	2
35		2800	SEELY JUDY		2X		1X			I	2
36		3600	SHEIL CARL				1X	4X		I	2
										I	
37		3500	SHEIL MARK				1X	3X		I	2
38		1000	SOMMERS CHRISTINE		2X		1X			I	2
39		3900	STACK EMIL			1X	1X			I	2
40	B	390	SUE RICHARDS							I	0
41		1800	THOMPSON MARGARET		2X		1X			I	2
										I	
42		2400	TOMLINSON DOUGLAS		2X		1X			I	2
43	A	2500	TOMLINSON WILLIAM		2X		1X			I	2
44		3200	TYLER BRAD				1X	3X		I	2
				0	1	1	3	1	0		7
			TOTALS	0	7	1	8	0	0		6

DEVELOPING MATHEMATICAL PROCESSES

INSTRUCTIONAL GROUPING RECOMMENDATION - GROUP PAGE 1
UNIT A DENNIS W. SPUCK ELEMENTARY SCHOOL AS OF 10/29/77

TOPIC 11 : REPRESENTING NUMEROUSNESS PICTORALLY

PREREQUISITES : M OR P RATING ON OBJECTIVES 1 AND 2 OF TOPIC 9

ID #	NAME	OBJECTIVE 1	OBJECTIVE 2	LAST ATTEMPT	# OF ATTEMPTS
500	COLLINS MARGARET	P	N	08/03/77	2
1700	DENNISON DEBORAH		P	08/03/77	1
200	DOUGHERTY SIDNEY	M	N	08/03/77	2
600	LAWRENCE CHARLES	N	P	08/03/77	2
1400	LAWRENCE RUSSELL	N		08/03/77	1
4000	MAY HARRY	M	N	08/03/77	2
3100	MAY ROBERT	P		08/03/77	1
3300	QUINN EMIL	P	N	08/03/77	2
700	SCHMELZER LEONARD				
1200	SCHMELZER SHERYL	N	M	08/03/77	2
2700	SCHMITZ PATRICIA	N	N	08/03/77	2
400	SCHULTZ MARGARET	M		08/03/77	1
2800	SEELY JUDY				
1000	SOMMERS CHRISTINE	P	N	08/03/77	2
1800	THOMPSON MARGARET	N	N	08/03/77	2
2400	TOMLINSON DOUGLAS		N	08/03/77	1
2500	TOMLINSON WILLIAM				

NUMBER OF STUDENTS IN UNIT = 44

Figure 7. IGR-Group Report, Topic 11

DEVELOPING MATHEMATICAL PROCESSES

INSTRUCTIONAL GROUPING RECOMMENDATION - GROUP
UNIT A DENNIS W. SPUCK ELEMENTARY SCHOOL

PAGE 1
AS OF 10/29/77

TOPIC 12 : TALLYING

PREREQUISITES : M OR P RATING ON OBJECTIVES 1 AND 2 OF TOPIC 11.

ID #	NAME	OBJECTIVE 1	LAST ATTEMPT	# OF ATTEMPTS
3000	CERNS ALAN	NP	08/04/77	
900	CHRISTENSEN DOROTHY	NP	08/04/77	
2300	DOUGHERTY RONALD	NP	08/04/77	
2100	GUNDERSON BONNIE	NP	08/04/77	
1100	LAWRENCE MARILYN			
1300	MCDONALD RUSSELL	NP	08/04/77	
3400	RAY MARY	NP	08/04/77	
800	RICHARDSON DEBORAH	NP	08/04/77	
1900	RICHARDSON KIMBERLY	NP	08/04/77	
1600	RICHARDSON MARTHA			
3900	STACK EMIL	NP	08/04/77	

NUMBER OF STUDENTS IN UNIT = 44

Figure 8. IGR-Group Report, Topic 12

DEVELOPING MATHEMATICAL PROCESSES

INSTRUCTIONAL GROUPING RECOMMENDATION - GROUP PAGE 1
UNIT A DENNIS W. SPUCK ELEMENTARY SCHOOL AS OF 10/29/77

TOPIC 14 : REPRESENTS NUMEROUSNESS SYMBOLICALLY

PREREQUISITES : M OR P RATING ON OBJECTIVE 1 OF TOPIC 12.

ID #	NAME	OBJECTIVE 1 2 3 4	LAST ATTEMPT	# OF ATTEMPTS
2600	ANDERSON BARBARA	M2	08/03/77	
300	CARLSON MARGARET			
2200	DOUGHERTY ELAINE			
2000	HENDERSON MICHAEL	M2	08/03/77	
1500	HYLAND CHRISTOPHER			
2900	RAY STEVE	M2	08/03/77	
100	RICHARDSON LARRY	M2	08/03/77	
3600	SHEIL CARL			
3500	SHEIL MARK	M2	08/03/77	
3200	TYLER BRAD	M2	08/03/77	

NUMBER OF STUDENTS IN UNIT = 44

Figure 9. IGR-Group Report, Topic 14

DEVELOPING MATHEMATICAL PROCESSES

INSTRUCTIONAL GROUPING RECOMMENDATION - OMISSIONS
UNIT A DENNIS W. SPUCK ELEMENTARY SCHOOL

PAGE 1
AS OF 10/29/77

STUDENTS NOT RECOMMENDED FOR THE FOLLOWING TOPICS :

TOPIC 10 : PATHS AND LOCATION
TOPIC 11 : REPRESENTING NUMEROUSNESS PICTORALLY
TOPIC 12 : TALLYING
TOPIC 13 : TIME
TOPIC 14 : REPRESENTS NUMEROUSNESS SYMBOLICALLY
TOPIC 15 : TWO-DIMENSIONAL SHAPE

ID #	NAME	RECOMMENDED TOPICS
2620	ADAMS,ALFRED	
240	BOZEMAN,PATRICK	
173	DOE,JOHN	
3290	FRITZ,FRED	
3960	MCISAAC,TARA	
390	SUE RICHARDS	

Figure 10. IGR-Omissions Report

INSTRUCTIONAL GROUPING

Student Group Assignments

The Student Group Assignment (SGA) report yields information relating to the instructional groups to which students are assigned (see Figure 11). For a specified set of students, the instructional groups to which each child is currently assigned are listed. This report is designed to decrease teacher time spent in locating a student's current group assignments. The SGA report also enables teachers to scan a student's group assignments and view the report in terms of his or her IPP reports. A comparison between the two may result in grouping modifications.

DENNIS W. SPUCK ELEMENTARY SCHOOL

STUDENT GROUP ASSIGNMENTS
UNIT A

PAGE 1
AS OF 10/29/77

ID #	NAME	INSTRUCTIONAL GROUPS
900	CHRISTENSEN DOROTHY	**NONE**
500	COLLINS MARGARET	DMP 03-A21
1700	DENNISON DEBORAH	**NONE**
200	DOUGHERTY SIDNEY	**NONE**
600	LAWRENCE CHARLES	**NONE**
100	RICHARDSON LARRY	**NONE**
700	SCHMELZER LEONARD	**NONE**
400	SCHULTZ MARGARET	**NONE**

Figure 11. Student Group Assignments Report

INSTRUCTIONAL GROUPING

Grouping Exception Report

The GER function generates the Grouping Exception Report (see Figure 12). This document lists those students within a particular unit who have been incorrectly grouped (i.e., not assigned to an instructional group or assigned to more than one group) within a specified curricular program. In the case of multiple assignments, the groups are specified.

The GER is self-explanatory. This report is a simple means of ascertaining whether all the students in a unit are accounted for in an instructional group. If students are incorrectly grouped, action may then be initiated to eliminate the problem. The group is not necessarily commensurate with the student's capabilities. Rather the GER enables the teacher to see to it that all students are in one, but no more than one, instructional group per instructional area.

DEVELOPING MATHEMATICAL PROCESSES

GROUPING EXCEPTION REPORT PAGE 1
UNIT B DENNIS W. SPUCK ELEMENTARY SCHOOL AS OF 10/29/77

THE FOLLOWING STUDENTS ARE NOT ASSIGNED TO ANY INSTRUCTIONAL GROUP :

690 BECK DAVID
530 BECK KENT
370 BECK MARK
170 BECK SUSAN
770 BOND ALAN

410 BOND MARK
210 BOND SUSAN
3990 BOZEMAN,WILL
1010 BROWN MICHAEL
7710 CHARLES,RAY

420 CREWS,GREG
810 DALY ALAN
610 DALY JOHN
290 DALY PETER
1130 EDGERTON JAMES

1370 HICKEY SUSAN
1050 HOWARD SARAH
570 KLUG KEITH
450 KLUG MARK
250 KLUG SUSAN

650 MALY EARL
1490 MCDONALD SARAH
1250 NELSON SUSAN
1290 ONEIL NORMAN
130 RAY BRAD

THE FOLLOWING STUDENTS ARE ASSIGNED TO MULTIPLE INSTRUCTIONAL GROUPS :

90 RAY DAVID
850 RICHARDSON EMIL
890 RICHARDSON KIRK
330 ROSE NED
930 SCHMITZ BRAD

1170 SEELY NORMAN
1410 SIMMONS DIANE
3230 SOVIK,NILS
3800 STACK JOHN
3700 STACK MARK

1530 TAYLOR HOWARD
50 WALKER NED
1453 WENDE,TREVOR

Figure 12. Grouping Exception Report

OTHER FUNCTIONS

The following functions do not in themselves generate reports. However, they perform a valuable and necessary service in maintaining the accuracy of instructional groups.

Function: DGP

When an existing instructional group is no longer appropriate, the Delete Group (DGP) function is employed. For example, this function is utilized when existing groups no longer satisfy instructional needs and regrouping is necessary.

Function: IIG

The Implement Instructional Group (IIG) function defines which students within a particular unit will be in a specific instructional group. There are two methods by which students may be assigned to a group. The first involves implementing a group from the index (sequence) numbers of students listed on the IGR-Summary report. The second method uses student identification numbers. Group rosters are the direct outcome of the IIG function. Rosters generated from the first method list students alphabetically while rosters utilizing the second method of implementation list students in the order they are entered.

Function: ESP

The Enter Student Into Program (ESP) function enters students into the curricular programs managed by WIS-SIM. In using this function, one may specify the instructional area and skill levels within that area to which the student is assigned. Furthermore, performance data from the student's previous school is entered into the data base. It should be mentioned that the skills or objectives engaged in must be analyzed in terms of the curricular programs supported by WIS-SIM in the student's new school.

Function: ASG

The Add Student(s) to Group (ASG) function allows students to be added to an existing instructional group. If a student seems to be performing at an entirely different level from that which was originally expected, group transfer is a viable solution. Once added, the students are graded along with the other students in the group. Students are added to the group roster at the end, in the order they are entered in the ASG function.

Function: DSG

The Delete Student(s) from Group (DSG) function may be used in conjunction with the ASG function. When students are not performing in accordance with a teacher's original expectations, group transfer may be in order. In accomplishing the transfer, a student in question must be deleted from his or her present instructional group. This is the function of DSG. When a student is deleted from a group, his or her name is replaced with a place marker.

DIAGNOSTIC REPORTING

Module Eligibility Profile

The Module Eligibility Profile (MEP) report generates information concerning the instructional readiness of students in a particular unit (see Figure 13). Specific skills of each instructional program form the basis of the MEP report. For each skill, the number of students in one of the following four categories are listed: mastered, enrolled, eligible, and not eligible. Mastered denotes mastery of the particular skill. Enrolled signifies that the student is ready for instruction and has successfully completed the prerequisites in order to pursue the skill listed. Non-eligible signifies that the prerequisites have not been met.

The MEP report condenses information contained in the MPP and IPP reports. Skills are listed in numerical order. Individual students are not identified. Rather, the sum total of students in a unit is listed for each skill requested under one of the four categories ranging from mastered to non-eligible. This report presents in matrix form a summary of student readiness related to specific instructional skills. By scanning the report, the teacher can identify the performance levels of a unit area.

The instructional needs of the unit are delineated in a general manner in the report. The teacher may easily observe where the bulk of the students are in terms of their progress. Note that the information contained in the MEP report is of a general nature. Subsequent to the viewing of this document, the teacher may investigate more thoroughly into the needs of the individual student by means of the reports focusing on the individual.

DEVELOPING MATHEMATICAL PROCESSES

MODULE ELIGIBILITY PROFILE PAGE 1
UNIT B DENNIS W. SPUCK ELEMENTARY SCHOOL AS OF 11/01/77

TOPIC	MASTERED	ENROLLED	ELIGIBLE	NOT ELIGIBLE
10	41	0	0	5
11	2	0	39	5
12	0	0	2	44
13	0	0	41	5
14	0	0	0	46
15	0	0	0	46

Figure 13. Module Eligibility Profile Report

Program of Studies

The Program of Studies (POS) report is available for either a unit, homeroom, instructional group, or individual student (see Figure 14). For the curriculum program specified, the POS report lists non-mastered skills for which students have completed the prerequisites.

Teachers may compare the recommended program with a student's prior and present progress in arriving at a realistic decision concerning his or her future program. Without the POS report, teachers must rely solely upon their personal judgement in concert with previous records of the student in developing a course of study. The POS report may provide support for a teacher's programming decision or, by the same token, may lead the teacher to reconsider a previously contemplated program.

DEVELOPING MATHEMATICAL PROCESSES

PROGRAM OF STUDY PAGE 1
UNIT B DENNIS W. SPUCK ELEMENTARY SCHOOL AS OF 11/01/77

ID #	NAME	RECOMMENDED TOPICS
90	@@@@@@@@@@@@@@@@@@@@@@@@	11 13 68 73 90
850	@@@@@@@@@@@@@@@@@@@@@@@@	11 13 68 73 90
890	@@@@@@@@@@@@@@@@@@@@@@@@	11 13 68 73 90
330	@@@@@@@@@@@@@@@@@@@@@@@@	11 13 68 73 90
930	@@@@@@@@@@@@@@@@@@@@@@@@	11 13 68 73 90

Figure 14. Program of Study Report

STUDENT DATA BASE MAINTENANCE

Function: IST

Report: Verification of Student Insertion. The Insert Student (IST) function enables a new student to be entered into the school's computer data base. The Verification of Student Insertion report simply demonstrates that the student has indeed been entered. Pertinent information included in this report, in addition to student name and identification number, are his or her unit, homeroom, birthdate, and date enrolled. Standardized test scores and annotative comments may also be included.

Function: DST

Report: Verification of Student Deletion. The Delete Student (DST) function removes individual students from the data base. The Verification of Student Deletion report informs the teacher that the student has in fact been deleted from the data base.

Function: MST

Report: Verification of Student Reassignment. The Move Student (MST) function is used to move an existing student within the school. The report generated from this function verifies that the student has been correctly transferred. This report does not pertain to instructional grouping alterations but rather to changes in units and in homerooms.

Function: MSD

Report: Verification of Student Modification. The Modify Student Data (MSD) function enables information concerning the student to be changed. Aspects of a student file which may be altered are name, sex, date of enrollment, annotative data, and standardized test scores. Information of this nature may be an update, an insertion, or a deletion. This function provides a means by which student information is kept current. The report acts, as do all the verification reports, as a correction to human error in the input of student data.

Function: RST

Report: Verification of Student Reinstatement. The Reinstatement Student (RST) function reinstates students who have previously been deleted (by use of the DST function) from the data base.

The verification report informs the teacher as to whether the student has actually been reinstated. The report is a precautionary measure and should result in decreasing the number of errors occurring in maintaining student records.

DENNIS W. SPUCK ELEMENTARY SCHOOL

VERIFICATION OF STUDENT ADDITION PAGE 1
UNIT B AS OF 10/29/77

ID #	NAME	UNIT	HOMEROOM	SEX	BIRTH	ENROLLED
7710	CHARLES,RAY	B	O'NEIL	M	06/03/69	10/29/77

INSERT STD-TEST : IQ SCORE 148 DATE-ADMINISTERED 06/10/69
INSERT ANNOT-TYPE : A APPEARS TO HAVE SOME MUSICICAL TALENT
INSERT ANNOT-TYPE : B LIKES THE PIANO

DENNIS W. SPUCK ELEMENTARY SCHOOL

VERIFICATION OF STUDENT DELETION PAGE 1
UNIT B AS OF 10/29/77

ID #	NAME	UNIT	HOMEROOM	INSTR. GROUPS
10	MAY GLADYS	B	O'NEIL	DMP 03-A21

DENNIS W. SPUCK ELEMENTARY SCHOOL

VERIFICATION OF STUDENT MODIFICATION PAGE 1
UNIT B AS OF 10/29/77

ID #	NAME	UNIT	HOMEROOM	SEX	BIRTH	ENROLLED
1453	WENDE,TREVOR			M		
1453	WENDE,TREVOR					10/12/77

DENNIS W. SPUCK ELEMENTARY SCHOOL

VERIFICATION OF STUDENT REINSTATEMENT PAGE 1
UNIT A AS OF 10/29/77

ID #	NAME	UNIT	HOMEROOM
3960	MCISAAC,TARA	A	NICHOLS

Figure 15. Student Data Base Maintenance Reports

APPENDIX A

USER FUNCTIONS, RELATED FORMS, AND OUTPUT

User Functions, Related Forms, and Output

User Function	Form required to initiate Request/Function:	Output Feedback (reports are Capitalized)
ASG	Student/Group Status Change Form	Group identification followed by a list of students added to the group.
CGD	MULTIPLE PERFORMANCE PROFILE or GRADING UPDATE REPORT	CORRECTION UPDATE REPORT
DGP	Student/Group Status Change Form	Verification of each group deleted.
DSG	Student/Group Status Change Form	Group identification followed by a list of students deleted from the group.
DST	Student/Group Status Change Form	VERIFICATION OF STUDENT DELETION
ESP	Baseline Performance Data Form	List of students with their level of entry
GER	Report Request Form	GROUPING EXCEPTION REPORT
GRD	MULTIPLE PERFORMANCE PROFILE or Baseline Performance Data Form	GRADING UPDATE REPORT
IAP	Report Request Form	INDIVIDUAL ACHIEVEMENT PROFILE and HOMEROOM ACHIEVEMENT PROFILE
IGR	Report Request Form	INSTRUCTIONAL GROUPING RECOMMENDATION - GROUP (optional) SUMMARY, and OMISSIONS

User Function	Information to be Reviewed/Necessary Forms	Output Feedback (Reports are Capitalized)
IIG	IGR - Reports or Student/Group Status Change Form	Group identification followed by a list of students in group
IPP	Report Request Form	INDIVIDUAL PERFORMANCE PROFILE
IST	Student Registration Form	VERIFICATION OF STUDENT INSERTION
MEP	Report Request Form	MODULE ELIGIBILITY PROFILE
MPP	Report Request Form	MULTIPLE PERFORMANCE PROFILE
MSD	Student Registration Form	VERIFICATION OF STUDENT MODIFICATION
MST	Student/Group Status Change Form	VERIFICATION OF STUDENT REASSIGNMENT
POS	Report Request Form	PROGRAM OF STUDY
RST	Student/Group Status Change Form	VERIFICATION OF STUDENT REINSTATEMENT
SGA	Report Request Form	STUDENT GROUP ASSIGNMENTS

APPENDIX B

SAMPLE FORMS

50 CMI REPORT REQUEST FORM (Sample forms as used by the McFarland Schools)

DIRECTIONS: Complete request form by circling, checking, or completing and forwarding to your unit aide.

Need by _____ (AM) (PM) Teacher _____

1. Requested for:

ELEMENTARY 199 ELVEHJEM 193

UNIT _____ DATE _____

2. Program Requested:

☐ DEVELOPING MATHEMATICAL PROCESSES (DMP)

☐ SCIENCE - A PROCESS APPROACH (SAPA)

☐ WISCONSIN DESIGN FOR READING SKILL DEVELOPMENT (WDRSD) AREAS:

☐ WORD ATTACK (WA)

☐ STUDY SKILLS (SS)

☐ COMPREHENSION (COMP)

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3. Report(s) Requested:

DIAGNOSTIC:

☐ Module Eligibility Report (MEP)

☐ Program of Study (POS)

☐ Pre-requisite Deficiency Report (PDR)

☐ Grouping Exception Report (GER)

☐ Progress Exception Report (PER)

GROUPING:

☐ Instructional Grouping Recommendation (IGR)

__Indiv. Class Lists __ Summary Chart Only

☐ Implement Instructional Group (IIG) Assign Students to Groups

☐ Modify/Retrieve Instructional Group Data:

1. Generate Group Roster
*2. Add Student(s) to Group
*3. Delete Student(s) from Group
4. Delete Group(s)
5. Student Group Assignments

*Indicate name/group on back of form

GRADING

☐ Interactive: Module Topic Skill

___Group ___Indiv. ___Skill

☐ Mark Sense Grading (MSG) Use Sheet Scanner

☐ Correct Grade(s) (CGD)

Scoring information attached

PERFORMANCE PROFILES:

☐ Multiple Performance Profile

__Unit __Group __Homeroom

☐ **Individual Achievement Profile (IAP) Time Based

☐ **Individual Performances Profile (IPP) By Instr. Unit

---

4. Report to Cover:
AREA(S), LEVEL(S), SKILL(S)
TOPIC(S)
MODULE(S)
TIME (FOR INDIVIDUAL ACHIEVEMENT PROFILE

_____
_____
_____

5. **List individual names on back side of this form.

SCORING:

NOTE: An MP, PP, or NP will not increment the student's number of attempts.

Raw scores are automatically converted to percents. 100 is shown as 99 (due to the two digit limit).

In addition to the raw scores available in WDRSD the following scores can be used:

M - Mastery (80 to 100% - criterion level after instruction)
MP - Mastery on pretest
P - Progressing (50 to 79% after instruction)
PP - Pretest score of 50-79%
N - Needs reteaching (below 50% after instruction)
NP - Non-mastery on pretest
MC - Mastery by Teacher Certification (adequate skill level observed)
NC - Not covered (student not enrolled or objectives not included in the student's program)
M1 - Mastery of mathematics objective occurred in the science program
M2 - Mastery of science objective occurred in the mathematics program
M* - Mastery by summarization (reduces file space)
MA - Master Applier

3.* Complete only for students to be added or deleted from an instructional group.

GROUP	DELETE (STUDENT)	ADD (STUDENT)

**Complete only if INDIVIDUAL PERFORMANCE PROFILE(S) are requested for Individuals.

Individual Student(s) (ID No.)	(Last Name, First Name)	Program Area(s)	Level(s) and Skill(s) Topic(s) or Module(s)

WIS-SIM STUDENT REGISTRATION FORM

NAME: _____ _____ [ ]
Last First Student ID No.

SEX: ☐ Male ☐ Female ☐ NEW STUDENT

DATE OF BIRTH: ____/____/____ ☐ MODIFICATION
Month Day Year

SCHOOL: _____ UNIT (A-J): _____

HOMEROOM TEACHER: _____ [ ]

STANDARDIZED TESTS:

	TYPE	RESULTS	DATE ADMINISTERED
1.	_____	_____	____/____/____
2.	_____	_____	____/____/____
3.	_____	_____	____/____/____
4.	_____	_____	____/____/____
5.	_____	_____	____/____/____
6.	_____	_____	____/____/____

ANNOTATIVE COMMENTS:

A. _____

_____

B. _____

_____

C. _____

_____

D. _____

_____

WIS-SIM STUDENT/GROUP STATUS CHANGE FORM

1. Requested for: SCHOOL _____ DATE REQUESTED _____

   UNIT _____ TEACHER _____ DATE NEEDED _____

2. Instructional group: (for grouping functions only)

   ☐ WDRSD Area-Level-Skill _____

   ☐ DMP Topic _____

   ☐ SAPA Module _____

   ☐ Other _____ _____

   ☐ Group ID Number

   _____ Instructing Teacher

3. Function requested: (check only one box)

   ☐ STUDENT REASSIGNMENT
   ☐ STUDENT REINSTATEMENT } New Unit _____ New Homeroom _____

   ☐ STUDENT DELETION

   ☐ IMPLEMENT GROUP
   ☐ ADD STUDENT(S) TO GROUP
   ☐ DELETE STUDENT(S) FROM GROUP } ☐ GENERATE GROUP ROSTER

   ☐ DELETE GROUP

4. Individual students: (last name, first name)

WIS-SIM BASELINE PERFORMANCE DATA

INSTRUCTIONAL PROGRAM: ☐ WDRSD { ☐ WA ☐ SS ☐ COMP } ☐ DMP ☐ SAPA ☐ NEW STUDENTS or ☐ Other _____ ☐ ADDITIONAL BASELINE PERFORMANCE DATA

ENROLLMENT DATE: ___/___/___ SCHOOL: _____ UNIT (A-J): _____

STUDENT		COMPLETE MASTERY TO LEVEL/ TOPIC/ MODULE	PRESENT LEVEL/ TOPIC/ MODULE	SKILL OR OBJECTIVE																			
ID NUMBER	NAME (MORE THAN ONE LINE MAY BE USED FOR EACH STUDENT)			01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20

57 58 54

WIS-SIM STUDENT REGISTRATION FORM

NAME: _____ _____ [ ]
Last First Student ID No.

SEX: ☐ Male ☐ Female ☐ NEW STUDENT

DATE OF BIRTH: ____/____/____ ☐ MODIFICATION
Month Day Year

SCHOOL: _____ UNIT (A-J): _____

HOMEROOM TEACHER: _____ [ ]

STANDARDIZED TESTS:

	TYPE	RESULTS	DATE ADMINISTERED
1.	_____	_____	____/____/____
2.	_____	_____	____/____/____
3.	_____	_____	____/____/____
4.	_____	_____	____/____/____
5.	_____	_____	____/____/____
6.	_____	_____	____/____/____

ANNOTATIVE COMMENTS:

A. _____

_____

B. _____

_____

C. _____

_____

D. _____

_____

WIS-SIM TEACHER REGISTRATION FORM

UNIT (A-J)	TEACHER NAME (last name, first initial)	TEACHER NUMBER

APPENDIX C

GLOSSARY OF TERMS

GLOSSARY

A - Computer code used for the Word Attack element of the Wisconsin Design for Reading Skill Development.

Area - An instructional element in the Wisconsin Design for Reading Skill Development. The areas included in WIS-SIM are Word Attack, Comprehension, and Study Skills.

C - Computer code used for the Comprehension element of the Wisconsin Design for Reading Skill Development.

CMI - Computer Managed Instruction - a system for instructional management in which a computer is used to enter and retrieve achievement data in various formats.

CO - Computer code used for the Comprehension element of Wisconsin Design for Reading Skill Development.

Data Base - Information on students and programs which is stored on the computer.

DMP - Developing Mathematical Processes - mathematics component of Individually Guided Education.

I - Indicates that a student's achievement is insufficient.

ID - Identification number - one is assigned to each student and teacher.

Level - Identifies skill levels A through G in the Wisconsin Design for Reading Skill Development.

Prerequisites - Skills or topics which should be mastered before beginning work on a new skill or topic.

SAPA - Science--A Process Approach, science curriculum of the American Association for the Advancement of Science (also called AAAS).

Skill - Instructional unit in the Wisconsin Design for Reading Skill Development.

SS - Computer code for the Study Skills element of the Wisconsin Design for Reading Skill Development.

Topic - Instructional unit in Developing Mathematical Processes.

Unit - Organizational division within a school.

WA - Computer code for the Word Attack element of the Wisconsin Design for Reading Skill Development.

WDRSD - Wisconsin Design for Reading Skill Development (also referred to as the Design) - reading component of Individually Guided Education.

X - Indicates that a student is ready for instruction in the indicated skill - used on the Instructional Grouping Recommendation - Summary report.

APPENDIX D

WISCONSIN SYSTEM FOR INSTRUCTIONAL MANAGEMENT BIBLIOGRAPHY

WISCONSIN SYSTEM FOR INSTRUCTIONAL MANAGEMENT BIBLIOGRAPHY

DATE: 1972

TITLE: Initial Activities Related to the Computer-Assisted Management of DMP (Wisconsin R & D Working Paper #109)

AUTHOR(S): Sidney Belt, Laird Marshall, Thomas Romberg

DESCRIPTION: This paper reports on the design and progress of pilot studies for evaluating procedures, techniques, and technologies as they relate to the computer-assisted management of Developing Mathematical Processes (DMP).

* * * *

DATE: 1973

TITLE: Utilization of the Datacraft at the Wisconsin R & D Center

AUTHOR(S): Sidney Belt

DESCRIPTION: This in-house paper discusses the R & D Center's Datacraft (Harris) configuration and utilization.

* * * *

DATE: 1974

TITLE: Computer Managed Instruction: An Application (published in The AEDS Journal, Vol. 8, No. 1

AUTHOR(S): Sidney Belt, Jaclyn Skubal

DESCRIPTION: This article discusses the implementation and input/output forms of the early versions of WIS-SIM.

* * * *

DATE: 1974

TITLE: Computer Managed Instruction: A Model (published in The AEDS Journal, Vol. 8, No. 1

AUTHOR(S): Dennis Spuck, Stephen Owen

DESCRIPTION: This article focuses upon the theoretical framework within which WIS-SIM was developed.

* * * *

DATE: 1974

TITLE: Computer Applications in Individually Guided Education: A Computer-Based System for Instructional Management (Wisconsin R & D Working Paper #125)

AUTHOR(S): Sidney Belt, Dennis Spuck

DESCRIPTION: This monograph details the preliminary system design of the Wisconsin System for Instructional Management. A generalized model of CMI is presented and applied to two IGE curricula.

* * * *

DATE: 1974

TITLE: Operational Proposal for Computer Managed Instruction for IGE in the Computational and Analytical Arts

AUTHOR(S): Sidney Belt, Ernie Thieding, Donald Barnes, Stephen Owen

DESCRIPTION: This paper was a proposal to ESEA Title III to implement WIS-SIM in DMP and SAPA at the McFarland, Wisconsin elementary schools. Also, continuation proposals were written in 1975 and 1976. All three were funded.

* * * *

DATE: 1975

TITLE: Computer Management of Individualized Instruction (Wisconsin R & D Center Theoretical Paper #55)

AUTHOR(S): Dennis Spuck, Stephen Hunter, Stephen Owen, Sidney Belt

DESCRIPTION: This theoretical paper discusses the various characteristics of individualized education and curricula and develops a theoretical framework for a CMI system.

* * * *

DATE: 1975

TITLE: Design Specifications for the Generalized Wisconsin System for Instructional Management (WIS-SIM) (Wisconsin R & D Working Paper #133, Parts 1 and 2).

AUTHOR(S): Sidney Belt, Dennis Spuck, et al.

DESCRIPTION: These papers follow the development and design of the Unified WIS-SIM based upon the finding of two years of pilot testing preliminary version. They, also, discuss the various extended components of WIS-SIM for future development.

* * * *

DATE: 1975

TITLE: Teacher's Guide for Instructional Decision-Making with the Wisconsin System for Instructional Management (Wisconsin R & D Center Practical Paper #16)

AUTHOR(S): CMI Staff

DESCRIPTION: This guide shows teachers how to effectively use WIS-SIM reports in DMP and WDRSD and outlines an appropriate decision-making setting within the instructional cycle.

* * * *

DATE: 1975

TITLE: Wisconsin System for Instructional Management: Users' Manual

AUTHOR(S): CMI Staff

DESCRIPTION: This manual describes specific log-on, system use, log-off, and error messages for WIS-SIM use on the current R & D Center Harris equipment.

* * * *

DATE: 1976

TITLE: Implementing Individually Guided Education (IGE) With the Aid of a Computer (published in Educational Technology, Vol. 16, No. 9)

AUTHOR(S): Sidney Belt, Sara West

DESCRIPTION: This article discusses the implementation of WIS-SIM within an IGE environment and suggests possible uses for the various reports.

* * * *

DATE: 1976

TITLE: Individualized Instruction: Its Structure and Management (published in Educational Technology, Vol. 16, No. 9)

AUTHOR(S): Dennis Spuck, Stephen Owen

DESCRIPTION: This article focuses upon the characteristics of individualized curricula and the impact of these characteristics upon instruction, information management, and the total instructional setting.

* * * *

DATE: 1976

TITLE: Teacher's Guide - Wisconsin System for Instructional Management: Science...A Process Approach II

AUTHOR(S): Stephen Owen, Ernie Thieding

DESCRIPTION: This guide is the same as Practical Paper #16 except it is oriented towards SAPA.

* * * *

DATE: 1977

TITLE: System Design Manual (WIS-SIM/DMP, WIS-SIM/SAPA, and WIS-SIM/WDRSD)

AUTHOR(S): Nancy Chan, Bruce Douglas, Sidney Belt, James McNamara, Lawrence Winkler

DESCRIPTION: These manuals contain the technical system documentation of the three separate curricula. Each manual has an introductory part presenting an overview of IGE and WIS-SIM followed by a part for each major computer program.

* * * *

DATE: 1977

TITLE: System Design Manual (WIS-SIM/Unified)

AUTHOR(S): Sidney Belt, Nancy Chan, Bruce Douglas, Stephen Owen, Dennis Spuck

DESCRIPTION: This manual contains the technical system documentation for the Unified Wisconsin System for Instructional Management (WIS-SIM). It contains seven separate parts including an introduction, a system overview, three parts on program documentation, a teacher's manual, and a terminal operator's guide.

* * * *

DATE: 1977

TITLE: Evaluation of the Wisconsin System for Instructional Management (WIS-SIM) Pilot Test (Technical Report No. 438).

AUTHOR(S): Dennis W. Spuck, William C. Bozeman, Brian F. Lawrence.

DESCRIPTION: This report includes an evaluation of the WIS-SIM pilot tests conducted in 1975-1977 in seven schools. Areas addressed include system functioning, utilization, and effects including topics such as user attitudes toward WIS-SIM, confidence in the system, costs, teacher time-usage, and subjective commentaries.

Several other working drafts and presentations were written covering various aspects of the WIS-SIM design, development, implementation, and evaluation. However, the subjects covered in these papers are equally covered in one or several of the above documents.